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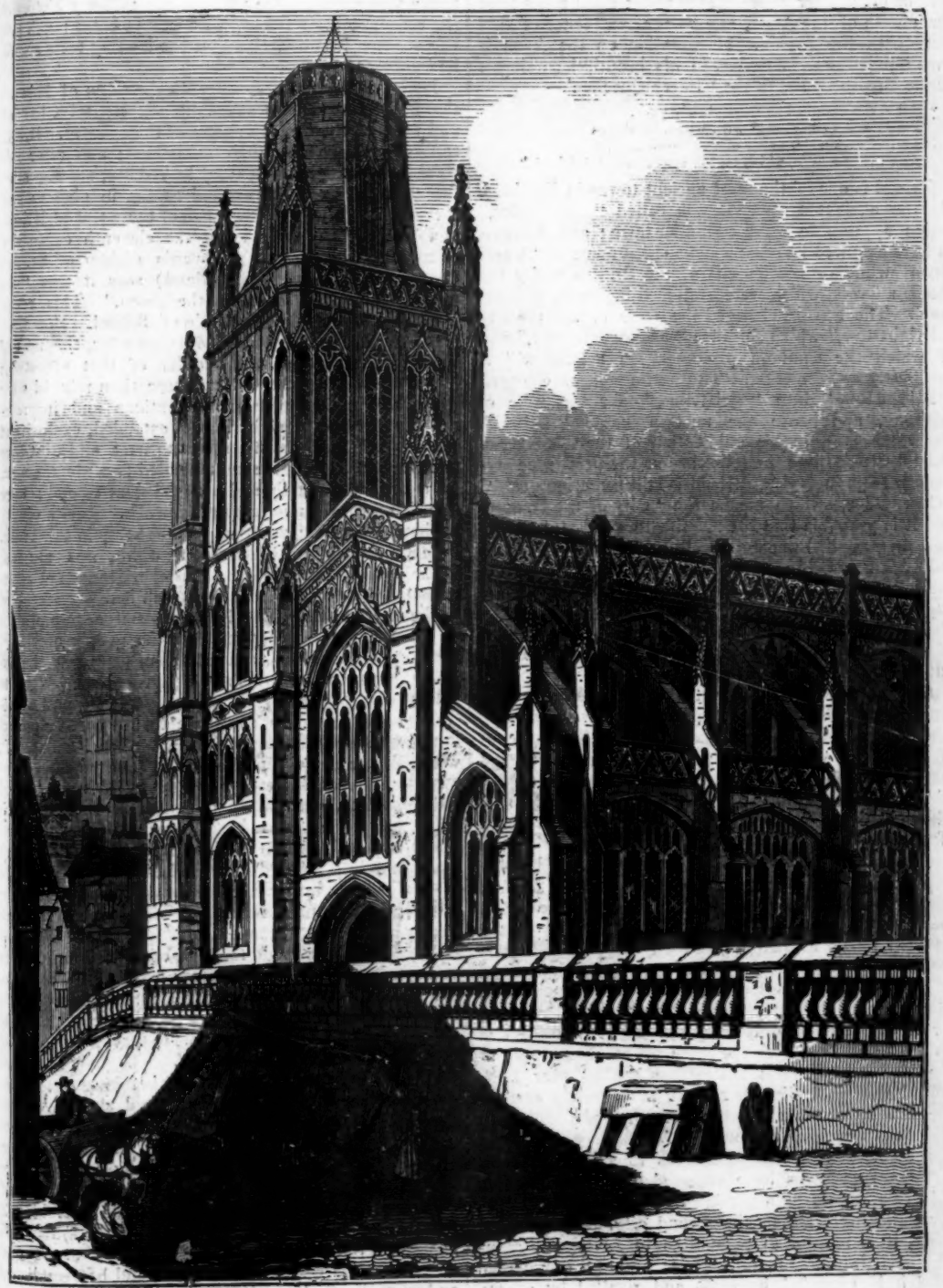
BRISTOL.



[Redcliff Church, Bristol.]

The Church of St. Mary Redcliff, Bristol, which is represented in our wood-cut, is one of the most beautiful ecclesiastical structures in England, and we shall avail ourselves of the opportunity it affords of furnishing an account of the important commercial city of which it forms so splendid an ornament.

Bristol is a city having separate jurisdiction apart from the county, situated principally in Gloucestershire, but extending into Somersetshire: in other words, Bristol stands on the river Avon, which divides the two counties, and about eight-ninths of its buildings are on the northern, or Gloucester shore. It is about eight miles from the mouth of the Avon, and at the confluence of that river with the Frome. Its situation on the Avon is thus alluded to by Spenser, in his beautiful catalogue of the British rivers, in the 'Faery Queene:'—

"But Avon marched in more stately path,
Proud of his adamants* with which he shines
And glisters wide, as als of wondrous Bath,
And Bristow faire, which on his waves he builded hath."

Bristol is one of the most ancient towns in England. By the ancient Britons it was called "Caer Oder," which appears to mean a frontier town; and it seems to have acquired its more usual ancient name of "Caer-Brito" while a protected city of the Britons under the Roman forces, which were stationed in the neighbourhood. The Saxons changed the name of the town to "Brightstow," which signifies "a pleasant place," and of which the common pronunciation "Bristow" is manifestly a contraction. The Latin writers changed "Brightstow" into "Bristollia," for the sake of euphony, and hence the modern name "Bristol." Seyer, however, in his publication of the 'Charter of Bristol City,' gives the following as the preferable etymology:—"In Welsh, Bristol is still sometimes called 'Caer Odor,' which means the 'City of the Chasm,' and it is probable that the old site to which this name was first applied was on the hill near the old camps at Cliff-town, or Clifton, where the Avon runs between the precipitous rocks of St. Vincent. When the Saxons superseded the British, they translated Caerodor by Brie-stowe, 'The Place of the Breach.'" The account of its origin given by William of Worcester, on the authority of a MS., is that which was generally received during the middle ages. He says that Bristow was founded by Brennus, son of Malmutius Dunwallo, who was King of the Britons 380 B.C. This account of the origin of the town appears to have been satisfactory to the inhabitants, for they placed over one of the gates two images of Brennus and Belinus, who are said to have reigned jointly after the death of their father. Whatever might have been its state under the early Britons, it is certain that it became a place of importance during the period of Roman occupation, for Gildas, who wrote in the fifth century, reckons "Caer-Brito" among the most important fortified towns in Britain; and in the year 620 it is mentioned by Nennius as one of the twenty-eight cities of Britain. Leland informs us that the town prospered greatly under the Saxons, and this was doubtless true; for it was first unequivocally recognised by history as an important place in the reign of Athelstan, and at the Norman Conquest Bristol was ranked after London, York, and Winchester. It now greatly exceeds the two latter cities in extent, wealth, and population, and thus acquired the name of "the second city in England." It is still sometimes thus distinguished, but younger towns have superseded its just claim to this title, unless by a quibble about the word "city;" for Bristol is certainly the second *city*, although, as a *town*, it is inferior in population to Liverpool, Manchester, Birmingham, and Leeds; and as a commercial *port* it is exceeded by some and rivalled by others.

* In allusion to the brilliant crystals called Bristol diamonds.

Bristol is still, however, "a place of great trade, and may still be considered in a prosperous state; but it is affected by the decline of the commerce with the West India Islands; and the rivalry and superior convenience of other ports will probably prevent its regaining the eminence it formerly attained*." Bristol appears, indeed, to have been always, according to the times, an active commercial town; and in the eleventh century it is said to have been the principal mart for the sale of English slaves of both sexes. Notwithstanding the pacific nature of its pursuits, Bristol occupies a very considerable place in the military history of the country; and, although we cannot enter much into this subject, it is desirable that the leading facts should be indicated.

Early in the tenth century, in the reign of Edward the Elder, the Danes sailed up the Bristol Channel, and ravaged the western shores of the country. Bristol suffered greatly from their incursions; and after Edward had defeated the enemy in Wessex, among other defensive measures, he erected castles in places where they seemed to be wanting: one of these was at Bristol, and Turgot (an historian of the eleventh century, a monk at Durham, and afterwards Bishop of St. Andrew's and Primate of Scotland) says it was "the goodliest of five built on the Avon." This seems the origin of the famous Castle of Bristol. Some, indeed, consider Robert, Earl of Gloucester, the natural son of Henry I., as the founder of that structure; but it seems that he did no more than rebuild some parts, and make important alterations and improvements. As completed by him, it extended, exclusive of the outworks, 450 feet from east to west, and 300 from north to south; and it comprehended two great courts, many towers, a church, and a magnificent chapel: there was also a royal palace within the walls. Earl Robert's nephew, Henry II., was partly brought up in this castle, which, in the reign of his son, John, was annexed to the crown. This king and his son, Henry III., confirmed and extended a charter which had been granted to the city by Henry II. In the intestine commotions of these and subsequent periods the people of Bristol were generally found active partisans against the existing government, which sometimes endeavoured to subdue their spirit by severe proceedings, and sometimes endeavoured to conciliate them by the grant of immunities and privileges. They besieged Edward I., while Prince Royal, in the castle, from whence, however, he effected his escape. Edward III. constituted Bristol a city and county in itself; and in the next reign the people opened their gates to Henry of Lancaster, and assisted him in storming the castle, in which many of King Richard's friends had taken refuge. In the following century the inhabitants of Bristol were warm partisans of the Earl of Richmond, afterwards Henry VII.; and at the Reformation, in the following reign, Bristol was made the seat of a bishopric. The castle appears to have somewhat fallen to decay at the commencement of the seventeenth century; and Charles I., on the application of the corporation of Bristol, made a grant of the whole to that body, receiving in return a consideration of 950*l.* The king had cause to repent of this bargain on the breaking out of the civil war, when the castle was repaired and garrisoned by the forces of the Parliament. It was, however, ultimately taken by storm, although with great loss, by Prince Rupert; but after the battle of Naseby it was retaken by Fairfax: and so important was this place considered, that this event is said to have given the final blow to the royalist party, and to have hastened the king's submission. When Cromwell became Protector he gave orders that the Castle of Bristol should be demolished, and so well were his orders executed, that scarcely any

* 'Boundary Reports,' Part IV., p. 219.

vestiges are now remaining. Happily for the town, its military history terminated with the destruction of its castle; and the most serious (though not the only) disturbance which its peace has since undergone, occurred at a very recent period. This was in September, 1831, when an alarming riot took place during the ferment occasioned by the rejection of the Reform Bill in the House of Lords,—the immediately exciting cause being the entrance of Sir Charles Wetherell into the city as recorder. The gaols were broken open and burnt,—the Mansion House and Custom House destroyed,—the toll-gates pulled down, and many private houses plundered and set on fire. From two to three hundred lives were lost, either in the flames, or by the endeavours of the military to repress the tumult.

The town of Bristol, in its most extended sense, includes many streets and buildings which lie beyond the boundaries of the "city," and which contribute 8072 houses to the number of 17,842, of which the town, as a whole, consists. These suburban portions have been included within the line drawn by the Boundary Commissioners for the purposes of election; so that the town of Bristol may be stated to extend, from east to west, two miles and five furlongs, and from north to south, three miles and five furlongs; while the diameter of the "city" alone, the form of which approaches to that of a square, is about one mile and four furlongs. The "city" covers a surface of 1840 acres: the area within the new boundary cannot be stated with precision, but does not appear to come short of 10,000 acres. The highest of the hills on which the city stands are St. Michael's and King's Down, which are 200 feet above the lower parts of the town. The streets in the ancient parts of the city are narrow, with lofty houses of wood and plaster. The fronts of these houses formerly projected in the usual style of old street architecture; but, of late years, many of the streets have been widened and improved, particularly those which lead to the bridges over the Avon and the Frome. The buildings in the more modern parts of the town are elegant and spacious; this is particularly the case with the western suburb of Clifton, which is joined to the city by a continuous line of buildings. "It constitutes," says the 'Boundary Report,' "the most beautiful and ornamental part of the town, and is inhabited by many of its most opulent citizens." The buildings in the external and suburban parts of the city are composed entirely of brick and stone; the use of wood, with which the old buildings are chiefly constructed, having been prohibited by Act of Parliament. The streets are now in general well paved, with smooth side-paths for foot passengers. The greater part of the town is lighted with coal-gas; but some of the shops, and the interior of many private houses, are lighted with oil-gas.

The public buildings of Bristol which more particularly claim our notice are the Cathedral, and the Church of St. Mary Redcliff. The present Cathedral is only a part of the original building, which was the church belonging to the Abbey of St. Augustine, founded, in the reign of King Stephen, by Robert Fitzharding, the ancestor of the Berkeley family, whose monument is still preserved within it. At the dissolution of the monastery, in the reign of Henry VIII., the church was partly demolished; but when the king had determined to create six 'new bishoprics, of which Bristol was one, and was informed that enough of the building remained to form a cathedral, he put a stop to the work of destruction. The structure, as it now stands, consists of the transept, the eastern part of the nave, and the choir of the original building. The length of the whole is 175 feet, the breadth of the transept is 128 feet,—the breadth of the nave and aisles is 73 feet, and the height of the tower is 140 feet. This tower, which, as usual, stands at the western end of the building, is of a large square structure, highly ornamented, and crowned with battlements and four pinnacles. The roof of the church is beautifully arched with stone, and it is remarkable that the two side aisles are of equal height with the nave and choir. There are some ancient painted windows, and many of the monuments are interesting as memorials of persons cut off in the prime of life while on a visit to the neighbouring waters: among these are Mrs. Draper, the "Eliza" of Sterne; and the wife of Mason, whose epitaph on his lost partner is well known.

We now come to the fine structure represented in our wood-cut. "The Church of St. Mary Redcliff," says Camden, "is like a cathedral, and on all accounts the first parish church in England." It was commenced, in the year 1249, by Simon de Burton, who was six times mayor of Bristol; but it was not completed until 1376, and was then celebrated for its beauty throughout the country. The tower and spire were at first 250 feet high; but in 1445 a dreadful storm destroyed part of the spire, and considerably damaged the church. The damage to the church was repaired by William Canynge, or Canning, five times mayor of Bristol, and whose name occupies so prominent a place in the Chatterton controversy: the spire, however, was never restored. The church is built in the form of a cross; and the nave, which rises above the aisles in the manner of a cathedral, is lighted by a series of lofty windows on each side, and is supported by flying buttresses. The tower is large, and, with the remaining part of the spire, richly ornamented with carved work, and with niches and statues. The principal entrance to the church is from the west front; but there are porches to the northern and southern sides of the church, the interior to the former of which possesses much beauty. It was over this porch that the room was situated in which Chatterton, whose father was sexton of the church, pretended to have found the poems which he attributed to Rowley. Although a massive building, yet, from its loftiness, and the peculiar beauty of its masonry, it has a light and airy appearance both without and within. The roof, which is nearly 60 feet in height, is arched with stone, and ornamented with various devices. The length of the church is 239 feet; that of the transept 117 feet: it is remarkable that the transept consists of three divisions or aisles, like the body of the church, and the effect thus produced is fine and striking, when the spectator places himself in the centre and looks around him. The breadth of the nave and aisles is 59 feet; the height of the nave is 54 feet, and of the aisles 25 feet. There are 15 other parish churches in Bristol, besides 5 chapels of the Established Church. There are about an equal number of places of worship for Dissenters, Roman Catholics, and Jews: some of the churches are fine structures.

[To be continued.]

Importance of accuracy in Accounts.—It is to be hoped that there are not many characters cast in the same mould as a tradesman in a provincial town, whose real name we shall suppress under the descriptive sobriquet of "Jamie Posthume." Whenever a person of any consideration in his neighbourhood happened to die, Jamie was in the constant habit of sending a bill to the executor for groceries, linens, candles, or other articles in which he dealt. For want of accurate accounts among the gentry, this source of income was found so abundant, that the half-uttered suspicions of some, and the open reproaches of others, were unable to put a stop to Jamie's favourite fraud, by which he taxed the whole vicinity, offering them the alternative of a law-suit if they refused to pay him tribute. At length he was effectually arrested in his career by a gentleman, who, after commencing his will with the customary invocation, proceeded to say,—"*Imprimis*—I owe Jamie Posthume—nothing!"

GAS.—No. III.

[Continued from No. 166.]

AFTER passing through the lime, the gas may be considered pure. It is now in a state to be measured, and placed in the reservoirs destined to contain it until wanted for use. The first of these purposes is effected by the gas-meter, invented in 1816. The construction of this instrument may be seen in figs. 1 and 2, the first of which is a front section, or view of the meter, as it would appear if cut through by a plane parallel to the face, so as to show the inside work to a person standing in front: the other figure is a side section. The letters of reference are the same in both. *c*, *c*, *c*, *c*, is a cylinder, or drum, closed on every side except at the centre *k*, where there is a hole pierced through both sides, and at *h*, near the edge, where the gas goes out of the machine when measured: this hole is not seen in fig. 1. The cylinder is made of sheet iron, and is hollow. Through one of the centre holes a pipe, *a*, is fixed, with its end turning upwards, to let in the gas to be measured. Withinside is another cylinder, *d*, *d*, *d*, *d*, which is divided inside into four compartments, *l*, *l*, *l*, *l*, by plates of sheet iron; these compartments communicate by the holes, or slits, *b*, *b*, *b*, *b*, with the hollow in the centre, where the gas is first let in: they have no direct communication with each other, but are connected with the outer space by the holes *e*, *e*, *e*, *e*. This inner cylinder turns freely on a pivot, *f*, *f*, running through it; fixed at one end to the cylinder, and at the other kept steady by the bar *m*, *m*, which is fastened across the centre hollow. This end of the pivot does not reach to the outside of the cylinder, but is inserted in a hole drilled in the side of the pipe *a*, which enters the internal cylinder. The other end projects from the inner cylinder, and reaches through the hole in the outer cylinder to a tin-cup, *n*, *n*, in a hole of which it turns. Within this cup, a cog-wheel, *g*, is fitted to the pivot, by which its revolutions are recorded on the face of a dial by the aid of clock-work. Water is poured in at the cup, *n*, *n*, until it reaches the level, *i*, and the machine is now ready for use. The operation of this ingenious instrument will be easily comprehended if the foregoing description has been well understood. The gas to be measured is admitted through the pipe *a*, which is bent upwards, so that its orifice is above the level of the water. The small portion of the central hollow above the water is soon filled, the gas then flows through *b* into that division which is almost all under water; this in the figure is on the right hand, marked *l*. The pressure of the gas on the surface of the water forces that division to rise, and, consequently, the whole internal cylinder to turn round.

Fig. 1.

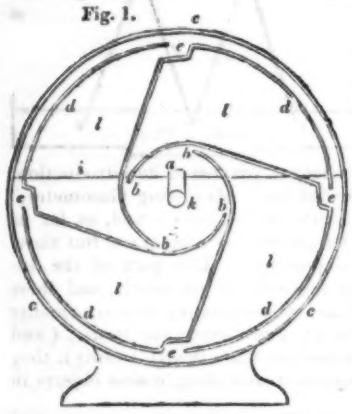
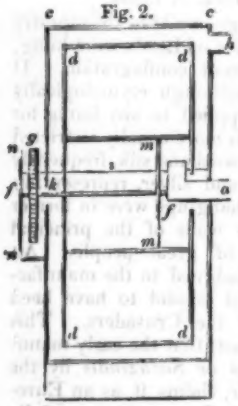
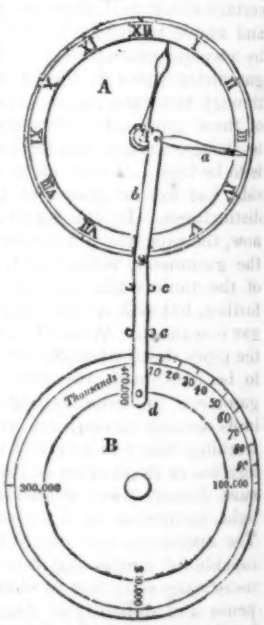


Fig. 2.



When this division is quite full of gas, the hole *b* will be just dipping under the water, and water will flow into it instead of gas. At the same moment, the slit, *c*, by which the division communicates with the outer cylinder, will rise above the water, and the gas will flow out as the water enters the hole *b*. The next division will then be filled in the same manner, the inner cylinder, with its pivot and the cog-wheel attached, will continue turning round, and the gas which has passed through it will leave the machine through the pipe *h*. It is now clear that in one turn of the inner cylinder as much gas will pass through the meter as is sufficient to fill up its four compartments; and if that quantity be known, it will be easy to arrange a piece of clock-work, attached to the machine, so as to point out on a dial the actual number of cubic feet that has passed through it. The measure of gas manufactured will thus be ascertained by simple inspection as easily as the hour is known by a watch. The gas-meter belonging to the establishment is made large enough to measure the whole quantity of gas manufactured; and smaller machines, capable of measuring a few hundred feet only, are sometimes attached to the houses of consumers of gas, by which the quantity they use can be accurately determined and paid for accordingly. These meters, from some cause which we do not understand, are not generally used in London, although it would seem they must be advantageous both to the consumer and manufacturer, as the former would not then be compelled to pay for more than he used, and the latter would not be cheated by unprincipled persons, who surreptitiously burn much more than they contract for. Gas-companies, of course, while liable to this species of imposition, are forced to average their charges accordingly, but the honest consumer is thereby compelled to pay a higher price.

An ingenious contrivance called a "tell-tale" is, in some establishments, attached to the great meter. This consists of a time-piece, A, placed perpendicularly over a card, B, attached to the meter, which goes round while a certain quantity of gas passes through the meter,—say 400,000 feet,—which may be the average quantity made in twenty-four hours. The card is graduated as in the figure. To the minute-hand of the time-piece, *a*, a rod, *b*, is suspended, carrying a pencil, *d*, at one end, the point of which rests against the card: the rod is restricted to a perpendicular movement by the guide-wires *c*, *c*. When the minute-hand of the time-piece is at 12, the pencil just reaches the edge of the outer circle on the card; and as the minute-hand goes on, the rod descends, and the pencil falls until the half hour, when it rises again until the hour is completed, making a descending and ascending stroke upon the card every hour. If, during the hour, no gas had been made, the card would have remained fixed, and the pencil would have traced a perpendicular mark in descending, which it would have marked over again in rising. This would show, on inspection, that the workmen had been idle, or the works out of order, and that no gas had been made



during that hour; but if the card, during that time, had moved forward by the action of the gas on the meter, the pencil would have traced a curve, wider or narrower as the card had moved more or less. This curve shows the quantity made every hour until the card is covered, when it must be taken out and a clean one put into its place.

The gas when measured goes to the gasometer. This word properly means gas-measurer; and is, therefore, an improper term for a vessel which is merely a gas-holder. But such an instrument having been long employed for measuring as well as holding gas, before its present use as a holder of coal-gas, it has retained its old, and at that time its appropriate, name*. The gasometer is a very large cylindrical vessel, *a* (Fig. 3), covered at the top, and open at bottom, like a tumbler turned upside down; it is placed in a tank, or pit, *b*, filled with water, just large enough to allow it to slide up and down, where it is suspended by a chain which runs over two pulleys, *d*, *d*, and a weight, *e*. These chains and weights are dispensed with in very large gasometers; for the weight of a hollow cylinder, whose sides are of a certain thickness, does not increase in the same proportion as its capacity increases: when it reaches a certain size, it will therefore remain suspended of itself, and above that size it will require to be kept down by a weight placed upon it. Two pipes, *c*, *c*, enter the gasometer through the bottom of the tank, passing through the water, above which their orifices rise. One of these pipes serves to convey the gas from the works to the gasometer, and the other to carry it off when it is to be used. These pipes are usually placed side by side, but are separated in the figure for the sake of distinctness. In the figure, the gasometer is full; if, now, the pipe which has brought in the gas be stopped, the gasometer, which has risen slowly from the bottom of the tank while the gas was entering, will rise no further, but will remain in its present position until the gas is wanted. When it is wished to send the gas into the pipes destined to convey it to the places where it is to be consumed, the other pipe is opened, and the gasometer immediately begins to sink, pressing the gas in its descent through an immense range of pipes, often reaching many miles; and it is a curious fact that any increase or diminution of pressure is instantly felt at the most distant point connected with the gasometer, the light increasing or diminishing at the same moment. The enormous size of these machines, some of them capable of containing 60,000 cubic feet of gas, and measuring sixty feet in diameter, together with the expense and difficulty of digging tanks to contain them, has led to the invention of other gasometers; one of the most ingenious of which, called the "Collapsing Gasometer," was planned by Mr. Clegg, in 1817. This machine was, in principle, similar to a portfolio, with the ends closed. It was placed in a shallow tank, with its edges only a few inches below the surface of the water, and when half-full was in the position of which Fig. 4 is a section. As the gas flowed out, the sides collapsed, and the bars, or plates, *d*, *d*, prevented the edges, *b*, *c*, from sinking lower as the gasometer closed. In this contrivance the expense of digging a tank was spared; but the great, and as it appears insuperable difficulty, of making the joints perfectly air-tight, as well as some minor inconveniences, prevented its introduction. Another invention, called the "Revolving Gasometer," seems also to have fallen into oblivion; and, as far as we know, there are no gasometers now in use but those on the old cylindrical principle. This part of the apparatus is the most unwieldy of the whole, and there appear to be no means of compressing it into a smaller compass. Where many gasometers are in use, (and there are in some establishments nearly twenty), they form the most conspicuous and disagreeable objects in the building.

Fig. 3.

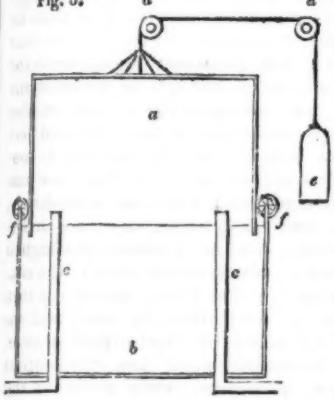
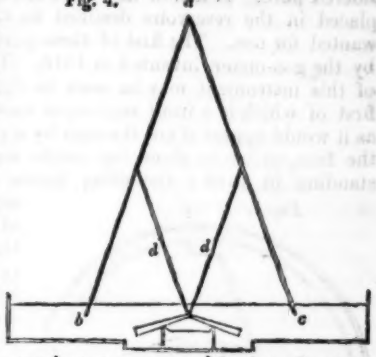


Fig. 4.



[To be continued.

* At some establishments no meter is used, and the quantity manufactured is estimated by the size and fulness of the gasometer. In this case the gasometer is a gas-measurer, though an imperfect one.

HOUSES OF PARLIAMENT.—No. II.

Tapestry of the late House of Lords.

In our last Number we alluded generally to the tapestry with which the walls of the House of Lords were hung, and which perished in the recent conflagration. It may be proper to state that, although etymologically the word "tapestry" may be applied to any lining for the walls of apartments, its use is more usually restricted to a sort of woven hangings of wool and silk, frequently raised and enriched with gold and silver, representing figures, landscapes, &c. Such hangings were in former times the usual linings to the walls of the principal apartments in the mansions of great people. An Eastern origin is commonly assigned to the manufacture and its application; and it is said to have been brought from the Levant by the Crusaders. This seems to be confirmed by the fact, that the early manufacturers were called *Sarazins* or *Sarazinais* by the French. Guicciardini, however, claims it as an European invention; and if the Bayeux tapestry was really the work of the Conqueror's consort and her ladies, a kindred art must indeed have acquired much perfection in Europe before the time of the Crusades. The fact seems to be that hangings of needlework were in use long before the loom was applied to furnish the same article with less labour and expense. Before that time, and to a smaller extent to a much later period, the working of figures with the needle formed a principal occupation among ladies of quality.

The first manufactures of tapestry that acquired reputation were those of Flanders; and they appear to have been long established in that country before they were introduced into England and France. This introduction took place in the seventeenth century—in England in the reign of Henry VIII., and in France in that of Henry IV. In both countries the art soon declined until it was revived, in France, in the reign of Louis XIV., when the French tapestry began to rival the best of the Flemish tapestries. In England the art was revived at the instance of King James I., who gave 2000*l.* to assist Sir Francis Crane in the establishment

of a manufactory at Mortlake in Surrey. There is extant, in Rymer's 'Fœdera,' an acknowledgment from Charles I., that he owes the sum of 6000*l.* to Sir Francis for tapestries; and he grants to him the sum of 2000*l.* yearly, for ten years, to enable him to maintain his establishment. Previously to this time the tapestries used in this country were chiefly imported from the Netherlands; and of the perfection to which the art had there attained, the tapestry in the House of Lords was an interesting evidence. We have already intimated that it was made in that country to commemorate the defeat of the Armada, in which the Netherlands, then struggling to shake the heavy yoke of Spain from its neck, were almost as much interested as England itself. The poet Spenser, who lived at the time, gives a beautiful description of the tapestry which Britomart saw in one of the apartments of the house of Busyrane; and in the description probably had in view actual specimens of tapestry then frequently to be seen in the principal mansions of this country.

"For round about the walls yclothed were
With goodly arras of great maiesty,
Woven with gold and silke so close and nere
That the rich metall lurked privily,
As fayning to be hid from envious eye;
Yet here, and there, and everywhere, unwares
It shewd itselfe and shone unwillingly;
Like a discolourd snake, whose hidden snares
Through the greene gras his long bright burnisht back declares.

And in these tapets weren fashioned
Many faire pourtraicts, and many a faire feate."

He then proceeds to describe some of the principal subjects represented, which were mostly love scenes from ancient mythology. With reference to another apartment of the same mansion, he says:—

"Much fayrer than the former was that roome,
And richlier by many parts arayd;
For not with arras made in painefull loome,
But with pure gold it all was overlayd,
Wrought with wild antickes, which their follies playd
In the rich metall, as they living were *."

As it was, this splendid tapestry to which we are particularly adverting was one among many proofs of the strong sensation which the defeat of the Armada made throughout Europe. That great event was represented in various designs, exhibiting the first appearance of the Spanish fleet;—the several forms in which it lay at different times on the English coast, or in presence of the comparatively small English force which pursued it;—the place and disposition of the fleets when engaged;—and its partial demolition, and final departure. The whole was admirably executed; and the dread that this fine work might perish through accident, or natural decay, happily occasioned the several parts to be engraved, about 100 years since, by Mr. John Pine, to whose volume, published in 1739, we shall presently turn, but think it best to introduce an account of the tapestries by the following account of the Spanish expedition, which we have abridged from the article 'Armada' in the 'Penny Cyclopædia,' to which we refer for more particular information than our space admits.

In May, 1588, the Spanish government had completed its preparations for the invasion of England, and the name of the "Invincible Armada" was solemnly conferred upon the naval force to which the execution of the undertaking was intrusted. It consisted, at this time, of 130 vessels: 65 of these were galleons and larger ships; 25 were pink-built ships; 19 tenders; 13 small frigates; 4 were galeasses; and 4 galleys. The soldiers on board amounted to 19,295, the mariners to 8050; of these, 3330 soldiers and 1293 mariners had been supplied by Portugal: besides which, the rowers in the galeasses amounted to 1200, and in the galleys to 888. There were also on board 2431 pieces of artillery, and 4575 quintals of powder: 347 of the pieces of artillery had likewise been supplied by Portugal. Two thousand volunteers of the most distinguished families in Spain, exclusive of the sailors and soldiers already mentioned, are stated to have accompanied the expedition. Besides this, another large military force was prepared by the Spanish governor in the Netherlands, the Duke of Parma, to co-operate with the fleet and troops from Spain. These were held in readiness in the neighbourhood of Nieuport and Dunkirk, and flat-bottomed boats were provided fit for transporting both horse and foot. The duke was thus perfectly prepared for his part of the undertaking, and anxiously waited for the Spanish fleet, persuaded that on its appearance the Dutch and English ships which cruised upon the coast would retire into their harbours.

* 'Faery Queene,' Book III., canto xi.

At the time when Queen Elizabeth began her preparations, her fleet did not amount to more than thirty ships, none of them nearly equal in size to those of the enemy. Ultimately, however, the different descriptions of vessels, large and small, which formed her navy, amounted to 181 ships, manned by 17,472 sailors. The military force consisted of two armies,—one for immediately opposing the enemy, the other for the defence of the queen's person. The army appointed for the defence of the queen's person amounted to 45,362, besides the band of pensioners, with 36 pieces of ordnance. The other army amounted to 18,449; the total of both armies to 63,511, besides 2000 foot, who were expected from the Low Countries.

It had been arranged that the Armada should leave Lisbon early in May; but the admiral, the Marquis de Santa Cruz, was, at the moment of departure, seized with a fever, of which he shortly died; and the Duke de Paliano, the vice-admiral, died also at the same time. These circumstances, and the difficulty of finding a suitable successor to so able a naval officer as Santa Cruz, occasioned some delay; but at last the Duke of Medina Sidonia was appointed admiral, and Martinez de Recaldo vice-admiral. The former was a person of high reputation, but of no maritime experience, which was, however, largely possessed by the latter. On the 29th of May the fleet left Lisbon; but on its way to Corunna, where it was to receive some troops and stores, it was overtaken by a violent storm, by which it was dispersed, and sustained much damage. All the ships, except four, however, reached Corunna, where they were repaired with the utmost expedition; but several weeks elapsed before the fleet was again in condition to put to sea. News of this event having reached England, with an exaggerated statement of the damage, it was concluded that the expedition was ruined for that season; and the English admiral, Lord Howard of Effingham, received orders from the government to lay up four of his largest ships and discharge the seamen. Instead of doing so, he determined to keep them at his own expense, if necessary; and in order to ascertain how the Armada was actually circumstanced, and with the view of completing its destruction, if it had suffered so much as reported, he sailed for Corunna. On the coast of Spain he soon learned the truth; and as a south wind had sprung up, he began to fear that the Armada might have already sailed for England, and therefore returned without delay to his former station at Plymouth.

Very soon after his arrival in port, Lord Howard was informed of the approach of the Armada; and the next day it was seen advancing in the form of a crescent, which extended seven miles from one extremity to the other. The precise object at which the Spanish Admiral immediately aimed remained uncertain; but it soon appeared that he intended to press up the Channel, and effect a junction with the forces assembled by the

Duke of Parma. In endeavouring to accomplish this intention, the Armada sustained much loss from the desultory and harassing attacks of the English ships which hung close upon its rear, ready to seize any advantage which accident or the inadvertence of the enemy might offer. When the Spaniards at last arrived off Calais, their admiral ordered them to cast anchor; but was soon induced, by information received from the Duke of Parma, to direct them to proceed on their course. They had already arrived in sight of Dunkirk, when a sudden calm put a stop to the motions of the different fleets for an entire day. In the middle of the following night a breeze arose, of which the English admiral availed himself by sending before it, against the different divisions of the Spanish fleet, eight vessels filled with combustible materials, which were set on fire. This threw the Spanish fleet into the greatest disorder, and Lord Howard hastened to improve this advantage by ordering a general attack the next morning. The battle which ensued lasted from four in the morning until six at night; and although the Spaniards fought with great bravery, they were able to do but very little execution against the English, while many of their own ships were greatly damaged and several of them lost. The Duke de Medina was led, by such untoward circumstances, not only to despair of success, but began to be apprehensive for the safety of his fleet. The bulk of his vessels rendered them unfit, not only for fighting, but for navigation in the narrow seas. He therefore resolved to abandon the enterprise; and feeling the difficulty of getting back to Spain by the way he came, he determined to sail northward, and return by making the circuit of the British isles.

After the fleet had rounded the Orkneys, a dreadful storm arose, in which many of the ships were wrecked on the rocks, or driven on shore, or foundered at sea; and subsequently almost equal damage was occasioned by another storm, which overtook the fleet from the west. The Duke de Medina himself having kept out in the open sea, escaped shipwreck, and arrived at Santander, in the Bay of Biscay, about the end of September, with no more than sixty sail out of his whole fleet, and those very much shattered. An account published at the time, apparently upon authority, thus estimates the loss of the Spaniards upon the coasts of England and Ireland:—"In July and August, ships 15, men 4,791; sunk, &c. upon the coast of Ireland, 17 ships, 5,394 men:" making a total of 32 ships and 10,185 men.

The interest which the Netherlands felt in these events is indicated not only by the tapestry which has given occasion to this account, but by the curious fact that the medals and jettons which were struck on the occasion were entirely Dutch; none were struck in England.

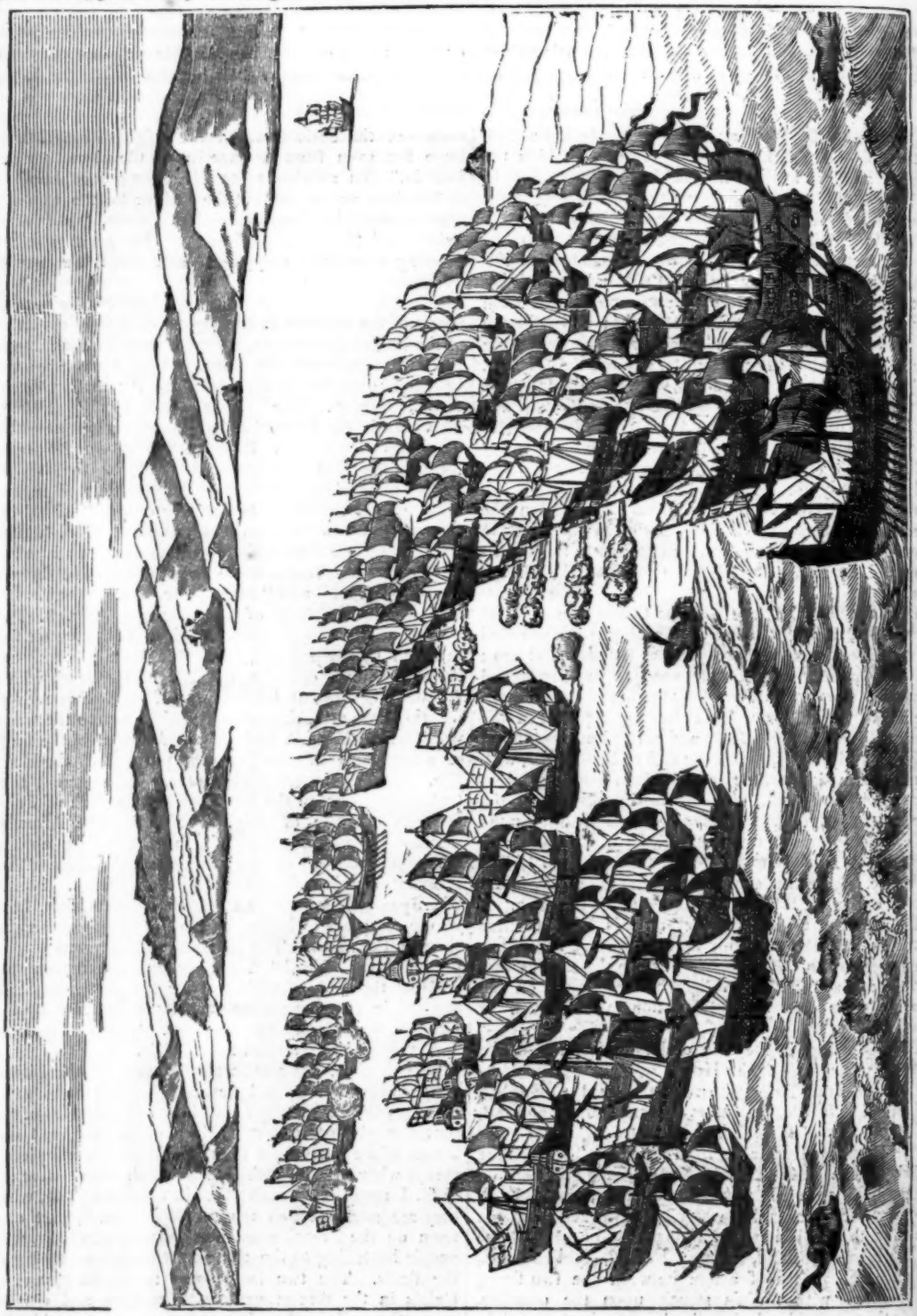
The following is the title of Pine's book:—"The Tapestry Hangings of the House of Lords, representing the several Engagements between the English and Spanish Fleets, in the ever-memorable year 1588, with the portraits of the Lord High Admiral, and other Noble Commanders, taken from the life. To which are added, from a book entitled 'Expeditionis Hispanorum in Angliani vera Descriptio, A. D. 1588,' done, as is supposed, for the said tapestry to be worked after, ten charts of the sea coasts of England, and a general one of England, Scotland, Ireland, France, Holland, &c., showing the places of action between the two fleets, ornamented with medals struck upon the occasion, and other suitable devices." These charts, medals, and devices, form very curious and interesting additions to Pine's work, in which he seems to intimate that the tapestries were executed on commission from this country; for he says,—"Our ancestors that were personally in it (the defeat of the Spanish Armada) were so careful that it should not pass into oblivion, that they procured the engagements between the two fleets to be represented in ten pieces of tapestry, with the portraits of the several English captains, taken from the life, worked in the borders, which are now placed some in the royal wardrobe and some in the House of Lords. * * But because time, or accidents, or moths may deface these valuable shadows, we have endeavoured to preserve their likeness in the preceding prints, which, by being multiplied and dispersed in various hands, may meet with that security from the closets of the curious which the originals may hardly hope for, even from the sanctity of the place they are kept in." In another place Mr. Pine quotes Joachim de Sandrart as stating that the designs for the tapestry were executed by Henry Cornelius Vroom, "a famous painter of Haarlem, eminent for his great skill in drawing all sorts of shipping;" and that it was woven by Francis Spiring.

The following account of the subjects of the several pieces of the tapestry in the House of Lords, exclusive of the border decorations, is drawn from Pine's volume. No. 1. Represented the Spanish fleet coming up the Channel, opposite to the Lizard, as it was first discovered. No. 2. The Spanish fleet against Fowey, drawn up in the form of a half-moon, and pursued by the English. No. 3. Represented, in the left-hand corner, the first engagements between the hostile fleets; after which the English, as represented in the other part, gave chase to the Spaniards, "who drew themselves up in the form of a roundel." No. 4. The galleon of De Valdez springs her foremast, and is taken by Sir Francis Drake, while the Lord High Admiral, with the "Bear" and "Mary Rose," pursue the enemy, who are in the form of a half-moon. No. 5. The admiral of the Guypuscoan squadron being set on fire is taken by the English, while the Armada continues its course until opposite the Isle of Portland, where another engagement takes place. No. 6. Some English ships are attacking some Spanish ones to the westward, while the main body of the Armada, in the form of a roundel, continues its course pursued by the English. No. 7. Represented a severe engagement that took place between the two fleets on the 25th of July, opposite the Isle of Wight. No. 8. The Armada, pursued close by the English, is seen sailing up the Channel, intending to stop at Dunkirk or Calais, where it was to be joined by the Duke of Parma. No. 9. The Spaniards come to an anchor before Calais, from whence they are dislodged by the fire-ships sent among them in the night. The English appear preparing to pursue them. No. 10. The Spaniards are represented making the best of their way for the Northern Seas, and are in the mean time very much battered by the English, who closely pursue them. The chief galeass is represented as stranded near Calais.

The views of the coast were, in some of the pieces, curious, interesting, and generally natural; and more attention than is usually found in the productions of the time was given to convey an idea of the different distances of the fleets from the shore in the several pieces, except when the French and English coasts were exhibited opposite to each other in the same piece, when they are always much too near. In No. 8, part of a town on the French coast was brought into view, with people hastening to the shore to witness the passing of the fleets. The two last pieces represented part of Calais in the fore-ground, with soldiers and citizens upon the walls, and various other persons outside the walls, mostly engaged in animated conversation, with the exception of one man, who, in both the pieces, was represented as occupied in angling underneath the walls. The sea was tolerably well supplied with dolphins, and other strange fish, which, in most instances, seemed to

oppose themselves, with fierce and grim looks, to the progress of the Spanish fleet.

Several of the pieces are very similar to one another, representing the Armada as proceeding in the form of a crescent, pursued by the English; and only diversified by the appearance of the coast, or by the capture or burning of single vessels. Our wood-cut, which will give an idea of the style of these compositions, is taken from No. 2 in the series of pieces, each of which has just been specified.



[The Spanish Armada being pursued by the English.]

*** The Office of the Society for the Diffusion of Useful Knowledge is at 59, Lincoln's Inn Fields.
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